REMARKS

Favorable reconsideration of the present application is respectfully requested.

Claims 5-8 remain withdrawn from consideration. Claims 1-4 and 9-14 remain active, of which Claims 3 and 4 have been allowed over the prior art, subject to overcoming the rejection under 35 U.S.C. § 112, second paragraph, as have Claims 13 and 14.

Applicants wish to thank Examiner Joyce for the courtesy of an interview on September 10, 2003, at which time the outstanding prior art rejections were discussed. In particular, Applicants pointed out that Claim 1 recites a friction transmission unit in which a profile defined by a function indicating a gap between the input member and the output member, in contact with each other through an applied load, is a profile other than a circular arc profile, and that the profile other than a circular arc profile, and that the profile other than a circular art profile is defined by a shape of contact stress distribution which monotonically decreases in areas near edges of a contact region. More specifically, in such a friction transmission unit it is desirable to attain constant stress distribution in order to reduce wear and improve transmission efficiency (see paragraph bridging pages 2-3).

Figures 4 and 5 of the present application illustrate examples of the profiles of power transmitting surfaces. For example, a conventional circular arc profile is indicated by channel lines and is defined by a circular function with respect to a gap between the input and output members in contact with each other through an applied load.

The solid line in Figures 4 and 5 indicates a hyperbolic sign profile defined by a hyperbolic sign function with respect to the gap between the input member and the output member in contact with each other through an applied load, e.g., defined by the function corresponding to the expression for "z" in equation (1) on page 12 of the specification. This

profile, which is defined by a non-circular function indicating a gap in the direction z between the input member and the output member represents an example according to the present invention.

Referring to Figure 6, it can be seen that the contact stress P peaks at a high value for the circular arc profile but it relatively constant for the non-circular hyperbolic sign profile which is an example according to the invention. The "Lundberg's" profile -- which is also non-circular -- provides stress peaks near the edges and thus does not provide a contact stress distribution which monotonically decreases in areas near edges of the contact region. Claim 1 thus recites a friction transmission unit wherein the profile defined by a function indicating a gap in a direction z which is formed between the input member and the output member in contact with each other through an applied load is a profile other than a circular arc profile, and is a profile which is defined by a shape of contact stress distribution which monotonically decreases in areas near edges of a contact region, and thus also excludes the Lundberg's profile.

Claims 1-4 and 9-14 were rejected under 35 U.S.C. § 102 as being anticipated by the U.S. patent to Urban, the U.S. patent to Michida et al., and the U.S. patent to Fellows. However, as was discussed during the interview, the amended claims clearly define over any of these references. Specifically, the contact region between the input and output members of each of these references is defined by circular profiles: the profiles in Urban have radii R_r; the profiles in Fellows have radii r_d and r_c; the profiles in Michida et al. are also circular. It was therefore agreed during the interview that this feature of the claims is not shown in prior art, and so the prior art rejections are believed to be moot.

The claims have been revised in light of the objections and rejections found in

paragraphs 5-7, with the exception that it is noted that "h" in Claim 3 is part of the symbol for hyperbolic sign ("sinh"), and "a" and "b" are simply constants in the conventional mathematical expression for a hyperbolic sign profile. The value "Pmax" is simply the maximum value of the contact stress P (page 6), and "E" is a well known mathematical term representing "Young's modulus." These rejections and objection are therefore believed to be moot.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER AND NEUSTADT, P.C.

Norman F. Oblon
Registration No. 24,618
Attorney of Record

Robert T. Pous
Registration No. 29,099

Customer Number
22850

(703) 413-3000
(703) 413-2220 (fax)

RTP/bwt
I:\atty\RTP\219315us-am.wpd